

MEMORANDUM OF UNDERSTANDING  
Between  
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
Office of Earth Science, Applications Division  
And  
THE UNITED STATES DEPARTMENT OF AGRICULTURE  
Research, Education, and Economics Division  
For  
COOPERATION IN EARTH SCIENCES

Purpose and Scope

This Memorandum of Understanding (MOU) provides a framework for cooperation between the National Aeronautics and Space Administration (NASA) and the United States Department of Agriculture (USDA) (hereinafter the Party or Parties) to facilitate science and technology research, development, transfer, utilization, and commercialization efforts in the area of Earth remote sensing.

This cooperation and coordination is not limited to the two Parties to this MOU, and each Party, independently or jointly, may cooperate with other Federal agencies and their extensions; interested State, regional and local agencies, colleges and universities; private industries, nonprofit organizations; and foundations and public interest groups. Both Parties view this MOU as important in improving the shared goals of remote sensing data acquisition, modeling, and applications in the following five areas:

- A. Carbon Management: Studies of Carbon sequestration assessment;
- B. Biological Invasive Species: Studies through environmental models;
- C. Water Management and Conservation: Studies of Water Cycle science;
- D. Agriculture Competitiveness: Increase competitiveness through use of weather/climate observation and prediction systems; and
- E. Air Quality Management: Studies of national to international atmospheric measurements and predictions.

The USDA and NASA shall handle their own activities and utilize their own resources, including the expenditure of their own funds unless otherwise agreed in specific implementing agreements, in pursuing these objectives. Each party shall carry out its separate activities, as agreed within the context of this MOU, in a coordinated and mutually beneficial manner.

Implementing agreements between NASA and USDA may be developed, pursuant to this MOU, to define specific undertakings and must be consistent with the provisions of this MOU. Such agreements may provide for the use of facilities, personnel, cooperative projects, and transfer of funds, and shall comply with the laws, regulations, and orders pertaining to the respective departments and agencies.

This MOU is not intended to and does not create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity, by a party against the United States, its agencies, its officers, or any person.

## II. Authorities

NASA enters into this MOU, pursuant to section 203(c) of the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2473 (c)). The USDA enters into this MOU, pursuant to section 1405 of the National Agriculture Research, Extension and Teaching Policy Act of 1977, as amended (7 U.S.C. 3121).

Nothing in this MOU alters the statutory authorities of NASA or USDA. This MOU is intended to facilitate cooperative efforts for mutual provision of services and support, as well as technical assistance by both Parties in the conduct of science and technology research, development, transfer, utilization, and commercialization programs, and activities in the area of Earth remote sensing. This MOU does not supercede or void existing agreements between NASA and USDA.

## III. Responsibilities

A. Within the context of the Purpose and Scope above, NASA agrees to use reasonable efforts to fulfill the following responsibilities:

1. Support USDA science and technology research, development, transfer, utilization, and commercialization efforts within the Research, Education, and Economics Mission Area as agreed upon by providing technical expertise for performance, planning, review, or consultation in areas of mutual interest, subject to program priorities and budget constraints.
2. Assist USDA by initiating and demonstrating practical uses of NASA-sponsored observations from remote sensing systems and predictions from scientific research and modeling through the Applications Division, with the NASA Earth Sciences Enterprise.

B. Within the context of the Purpose and Scope above, USDA agrees to use reasonable efforts to fulfill the following responsibilities:

1. Support selected NASA technology research and development within the Office of Earth Science, Applications Division, as agreed upon by providing technical expertise for performance, planning, review, or consultation in areas of mutual interest, subject to program priorities and budget constraints.
2. Pursue the collaborative application of NASA Earth Science Enterprise data and scientific models in USDA agencies including, but not limited, to the Cooperative State Research Education and Extension Service, the Economic Research Service, the National Agricultural Statistics Service, the Agricultural Research Service, the Animal and Plant Health Inspection

Service, the National Resources Conservation Service, and the Forest Service.

3. Engage in collaboration including, but not limited to, identifying specific USDA decision-support processes, assessments and systems that require predictions and observations that may be provided by NASA's Earth Science Enterprise data and remote sensing systems; identifying performance expectations/requirements for NASA inputs to any processes identified; collaborating with NASA on the evaluation, verification, and validation of results for component solutions; and collaborating with NASA in the benchmarking process to establish quantifiable improvements in system performance.

C. Within the context of the Purpose and Scope above, NASA and USDA agree to use reasonable efforts to fulfill the following responsibilities:

1. Reference this MOU in any supplemental agreements, amendments, interagency agreements, implementing agreements, or letters of agreement executed between the two Parties, pursuant to the objectives of this MOU.
2. Support the exchange of technical information – through databases, information systems, clearinghouses, conferences, and other means – on research, development, demonstration, and technology transfer opportunities.
3. Establish an interagency working group to accelerate the development, evaluation, and adoption of existing and new technologies in, but not limited to, the areas outlined in the Purpose and Scope.
4. Encourage through education and outreach, in partnership with both public and private organizations, the public awareness and access to space-based advances in agricultural and natural resources sciences.
5. Educate State cooperative extension agents and other ambassadors to the agricultural community with improved knowledge for agriculture-based applications of Earth Science research and technology.
6. Provide effective and efficient information delivery to the agriculture community to enhance understanding of innovative solutions to the applications of Carbon Management, Invasive Species, Water Management, Agricultural Competitiveness, and Air Quality.

D. All activities under or pursuant to this MOU are subject to the availability of appropriated funds, and no provision of this MOU shall be interpreted to require the obligation or payment of funds. As presently constituted, this MOU does not constitute a financial obligation. If a subsequently identified activity or project is identified requiring a transfer of funds or other obligation between NASA and the USDA, a supplemental written agreement will be executed. Such activity or project must be independently authorized by appropriate statutory authority. This MOU does not provide such authority. Negotiation, execution, and administration of each such agreement must comply with all applicable statutes and regulations.

E. Each Party agrees to assume liability for its own risks associated with activities undertaken in this agreement.

IV. Responsible Officers

The following are Responsible Officers in NASA and USDA for the agreement.

NASA:

Mr. Ronald J. Birk  
Director Applications Division  
Earth Science Enterprise  
NASA Headquarters, Code YO  
300 E Street SW  
Washington, DC 20546  
Telephone: (202) 358-3098

USDA:

Dr. Rodney J. Brown  
Deputy Under Secretary  
Research, Education, and Economics Division  
United States Department of Agriculture  
1400 Independence Avenue SW  
Washington, DC 20250-0110  
Telephone: (202) 720-8885

V. Duration

This MOU becomes effective on the date of signatures of both Parties and shall remain in effect for a 5-year term from the effective date.

VI. Termination

Either Party may terminate this MOU for any reason it deems substantial, upon a 90-day written notice to the other Party.

  
SEAN O'KEEFE, Administrator  
National Aeronautics and Space  
Administration

  
ANN M. VENEMAN, Secretary  
United States Department of  
Agriculture

May 30, 2003  
Date

May 30, 2003  
Date